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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/763,741
Filing Date: January 23, 2004
Appellant(s): RAMANI ET AL.

Joseph P. Mehrle
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 07/21/2009 appealing from the Office action mailed 01/22/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

GROUNDS OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief.

Claim 3 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Igarashi et al. Patent No. US 6,549,201.

Claim 75 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Miyao et al. Patent. No. US 6,466,237.

Claims 78-81 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Friedman Patent No. US 5,760,778.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 6,329994	Gever et al.	12-2001
US 2003/0071810	Shoov et al.	4-2003
US 6,549,201	Igarashi et al.	4-2003

US 5,760,778	Friedman	2-1998
US 6,466,237	Miyao et al.	10-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-2, 4-7 and 76-77** are rejected under 35 U.S.C. § 102(b) as being anticipated by Gever et al. Patent No. US 6,329,994.

As per **claim 1**, Gever et al. teach a method for searching, comprising:

receiving a three dimensional object (col. 11, lines 16-26; col. 26, lines 31 – 38);

searching one or more data stores with the three dimensional object as a first search query (col. 7 line 59 – col. 8 line 5; col. 11, lines 16-25; col. 26, lines 28-38; col. 27, lines 38-45);

presenting results from the search, wherein the results include an answer set (col. 12 line 62 – col. 13 line 10);

dynamically receiving modifications for one or more items in the answer set (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9); and

re-searching the one or more data stores with the modifications associated with the one or more items as a second search query (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9).

As per **claim 2**, Gever et al. teach the method of claim 1 further comprising, converting the three dimensional object into a graph skeleton defining a graph data structure, wherein the graph data structure is the first search query (Fig. 4; col. 7 line 59 – col. 8 line 10; col. 9 line 53 – col. 10 line 5; col. 16 lines 46-55; col. 19 line 62 – col. 20 line 21).

As per **claim 4**, Gever et al. teach wherein the receiving the three dimensional object further includes presenting a list of three dimensional models and permitting the three dimensional object to be formed from selective ones of the list of three dimensional models (col. 1 lines 29-36; col. 23 lines 11-20).

As per **claim 5**, Gever et al. further teach wherein the presenting the results further include grouping selective portions of the one or more items in the answer set into related clusters (col. 26 line 64 - col. 27 line 8).

As per **claim 6**, Gever et al. further teach the method of claim 1 further comprising, receiving one or more filters which constrain the first or second search queries (col. 8, lines 5-23; col. 26, lines 28-50).

As per **claim 7**, Gever et al. further teach wherein the re-searching further includes identifying in the modifications for the one or more items information that identifies selective ones of the items that are more relevant to the first search query than selective other ones of the items (col. 27 line 46 - col. 28 line 9).

As per **claim 76**, Gever et al. further teach wherein one said filter comprises a total volume filter (col. 8, lines 5-23; col. 26, lines 28-50).

As per **claim 77,** it has similar limitations as claim 1; therefore it is rejected under the same rationale.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claim 3** is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Igarashi et al. Patent No. US 6,549,201.

As per **claim 3**, Gever et al. teach wherein receiving the three dimensional object (col. 11, lines 16-26; col. 27 line 46 – col. 28 line 3);

However, Gever et al. do not explicitly teach further includes interactively permitting the three dimensional object to be sketched.

Igarashi et al. teach a sketching interface for quickly and easily designing freeform models such as stuffed animals and other rotund objects. The user draws several 2D freeform strokes interactively on the screen and the system automatically constructs plausible 3D polygonal surfaces (Abstract; col. 1, lines 35-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Igarashi et al. to provide a sketching interface for a 3D freeform design, because it would allow user to sketch searchable object.

5. **Claims 8-13** are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Shoov et al. Pub. No. US 2003/0071810.

As per **claim 8**, Gever et al. teach a method of searching, comprising:

searching one or more data stores with the three dimensional representation as a first search query (col. 7 line 59 – col. 8 line 5; col. 11, lines 16-25; col. 12 line 62 - col. 13 line 10; col. 26, lines 28-38; col. 27, lines 38-45); and

presenting one or more items in an answer set that is responsive to the first search query of the one or more data stores (col. 11 lines 16-25);

However, Gever et al. do not teach

a) receiving a two dimensional object ;

b) mapping the two dimensional object to a three dimensional representation.

Shoov et al. teach

a) receiving a two dimensional object as the functions can include the ability to import two-dimensional representations of a three-dimensional object (abstract);

b) mapping the two dimensional object to a three dimensional representation as the 2D drawing 303 consists of four 2D views 304-310. Mapping each view into 3D space may occur immediately after each view is selected and the orientation is indicated (page 2, paragraphs [0012, 0013, and 0028]; page 5, paragraphs [0052-0053]).

It would have been obvious to one of ordinary skill in the art at the time of the 1invention was made to combine the teaching of Gever et al. and Shoov et al. to map 2D views to 3D representation, because it would reduce or simplifying the steps needed to convert between 2D and 3D representations of an object.

As per **claim 9**, Gever et al. further teach wherein the mapping further includes:

representing the three dimensional skeleton as a three dimensional graph structure, wherein the three dimensional graph structure is used as the first search query (Fig. 4; col. 7 line 59 – col. 8 line 10; col. 9 line 53 – col. 10 line 5; col. 16 lines 46-55; col. 19 line 62 – col. 20 line 21).

However, Gever et al. do not explicitly teach representing the two dimensional object as a two dimensional skeleton as 2D representation of a model; and converting the two dimensional skeleton into a three dimensional skeleton.

Shoov et al. teach representing the two dimensional object as a two dimensional skeleton as 2D representation of a model (page 2, paragraph [0027]);

converting the two dimensional skeleton into a three dimensional skeleton as converting between 2D and 3D representations of a modeled object (page 2, paragraph [0027]; page 4, paragraphs [0044-0045); and

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Shoov et al. to convert two dimensional views of an object into a three dimensional model, because it would simplify the steps needed to convert between 2D and 3D representations of an object.

As per **claim 10**, Gever et al. further teach the method of claim 8 further comprising:

receiving relevance indications for a selective number of the one or more items in the answer set (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9); and

searching the one or more data stores with the selective number of the one or more items and the relevance indications as a second search query (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9).

As per **claim 11**, Gever et al. further teach retaining the relevance indications as preferences for subsequent search queries received and processed, where the retained relevance indications are used as filters to subsequent first queries (col. 8, lines 5-23; col. 26, lines 28-50; col. 27 line 46 - col. 28 line 9).

As per **claim 12**, Gever et al. further teach the method of claim 8 further comprising organizing the answer set as a plurality of related clusters, wherein each related cluster includes a selective number of the one or more items (col. 26 line 64 - col. 27 line 8).

As per **claim 13**, Shoov et al. further teach wherein the mapping further includes:

converting the two dimensional object into a two dimensional skeleton; generating candidate three dimensional vertices for each of two dimensions of the two dimensional skeleton; generating candidate three dimensional edges from the candidate three dimensional vertices; creating candidate three dimensional faces from the three dimensional edges on a same surface; creating one or more three dimensional objects from the candidate three dimensional faces; and associating the one or more three dimensional objects with the received two dimensional object as the three dimensional

skeleton (page 3, paragraphs [0030-0038]; page 4, paragraph [0045]; page 6, paragraph [0059]; page 7, paragraph [0072]; page 8, paragraph [0075]).

6. **Claim 75** are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Miyao et al. Patent No. US 6,466,237.

As per **claim 75**, Gever et al. teach the invention substantially as claimed as discussed above; however, Gever et al. do not explicitly teach the method of claim 5 further comprising, selecting a cluster to allow further browsing within that selected cluster.

Miyao et al. teach selecting a cluster to allow further browsing within that selected cluster as selection of a cluster of file bundles from a plurality of clusters (col. 6 lines 56-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Miyao et al. to select a cluster of items for browsing, because it would allow user to browse related items more quickly.

7. **Claims 78-81** are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Friedman Patent No. US 5,760,778.

As per **claim 78**, Gever et al. further teach wherein searching further includes:

using matcher to determine whether graphs in the one or more data stores satisfy criteria (col. 8 lines 5-34; col. 11 lines 16-25; col. 26, lines 31 – 38); and

using matcher to evaluate similarity between the skeletal graph and the graphs in the one or more data stores that satisfy the criteria (col. 8 lines 5-34; col. 11 lines 16-25; col. 26, lines 31 – 38).

However, Gever et al. do not explicitly teach high-level graph and low-level graph.

Friedman teaches a high-level graph as curvature estimation and straight lines (col. 1 lines 27-38; col. 3 lines 23-28); and a low-level graph as volumetric, volume primitives (col. 1 lines 27-38; col. 1 line 65—col2 line 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Friedman to use curvature information, straight line and volume primitives as searching criteria, because it would enables user to find suitable images more efficiently and quickly.

As per **claim 79**, Friedman teaches wherein the criteria include topology criteria and geometric properties (Fig. 4; col. 1 lines 27-38; col. 3 lines 23-28).

As per **claim 80**, Friedman teaches wherein the geometric properties comprise at least one of:

edge type; curvature information for surface loops; a parametric equation of a curve; local volume of features that converge; local moments of the features that converge; and local distances from a surface (col. 1 lines 27-38; col. 3 lines 23-28).

As per **claim 81,** it has similar limitations as claim 78; therefore it is rejected under the same rationale.

(10) Response to Argument

Appellant argued in substance that

(A) Prior art does not teach "**searching one or more data stores with the three dimensional object**."

As to point **(A)**, Examiner respectfully submits that Gever et al. teach the limitation "**searching one or more data stores with the three dimensional object**" as a preferred embodiment is provided a method for finding a desired image (a 3D Smart Object) among a library of images stored by a computer including: displaying a first plurality of images from the library on a display associated with the computer; selecting a first image from among the first plurality; and searching through the library to find a second plurality of images resembling the first image in one or more characteristics thereof. The search engine is preferably used to search through a library of animations and/or animated objects, most preferably, 3D Smart Objects (col. 7 line 59 – col. 8 line 5; col. 11, lines 16-25; col. 26, lines 28-38; col. 27, lines 38-45).

(B) Prior art does not teach **"searching one or more data stores with a three dimensional representation."**

As to point **(B)**, Examiner respectfully submits that Gever et al. teach the limitation **"searching one or more data stores with a three dimensional representation**" as an associative visual search engine is provided to assist the user in selecting elements to be incorporated in a computer animation. The engine is used in searching through an image database that may include image representations of Smart Objects and sub-objects thereof, as well as other animations, still objects and background and border images (col. 7 line 59 – col. 8 line 5; col. 12 line 62 - col. 13 line 10). Also, see the response to argument in point **(A)**.

(C) Prior art does not teach **"searching one or more data stores for graphs that are similar to a skeletal graph."**

As to point **(C)**, Examiner respectfully submits that Gever et al. teach the limitation **"searching one or more data stores for graphs that are similar to a skeletal graph"** as FIG. 4 is a block diagram illustrating the data structure of a 3D Smart Object 70. Smart Object 70 comprises a skeleton, including surfaces 76, a hierarchy of organs 78 and behaviors 74. Organs 78 are made up of sub-organs 90, which are in turn made up of 3-D objects 86. FIGS. 13A and 13B are graphic representations of display 52, schematically illustrating a user interface window 200 associated with a visual search engine. The search engine is preferably used to search through a library of animations and/or animated objects, most preferably, 3D Smart

Objects. Each item in the library or database to be searched must have at least one, and preferably a plurality, of keywords associated therewith. The keywords preferably describe different aspects of the item, such as its name and type, subject matter, character, appearance, style, color, size, etc, wherein the term "name" refers to the reference name of a Smart Object character with which the organ, sub-organ or object is associated. To use the search engine, a user preferably enters a keyword or selects an image from an initial group of images displayed on the computer screen. The engine then searches the database for images matching the keyword that was entered or matching a keyword or keywords associated with the selected image. (col. 8 lines 6-11; col. 15 line 65-col. 16 line 19; col. 17 lines 25-41; col. 26 lines 28-51) .

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Dung K Chau/
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